KARANDEYEV, K.B.; ZAKHARIYA, I.A.

Switching method for the analysis of errors in rectifier devices. Nauch. zap. IMA AN URSR. Ser. avtom. 1 izm. tekh. 4:43-55 '55. (Electric current rectifiers) (MLRA 10:8)

KARANDEYEV, K.B.; ZAKHARIYA, I.A.

A method for the compensation of temperature errors in rectifier devices. Nauch. zap. IMA AN URSR. Ser. avtom. i izm. tekh. 4:56-58 '55. (MLRA 10:8)

(Electric current rectifiers)

8 (2)

SOV/112-57-5-10506

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1957, Nr 5, p 139 (USSR)

AUTHOR: Karandeyev, K. B., Sigorskiy, V. P., Sobolevskiy, K. M.

TITLE: On the Theory of a Balancing Branch
(K teorii simmetriruyushchey vetvi)

PERIODICAL: Nauch. zap. In-ta mashinoved. i avtomatiki, AS UkrSSR, 1955, Vol 5, pp 5-19

ABSTRACT: Formulae are presented to determine the necessary adjustments for resistors in the balancing branch arms and to determine the permissible relative variation of parasite conductances for a specified measuring error of the bridge. Application of the formulae is illustrated by an example.

Z.I.Z.

Card 1/1

KARANDEYEV, K.B.; GRINEVICH, F.B.

Sensitiveness and consistency of the parameters for electric measuring devices. Nauch.zap. IMA AN URSR. Ser.avtom. i izm. tekh. 5:20-40 '55. (MLRA 9:10)

(Electric instruments)

KARANDEYEV, K.B.; GRINEVICH, F.B.

Errors in quadruple a.c. balanced four-arm bridges. Nauch.zap. IMA AN URSR. Ser.avtom. i izm. tekh. 5:41-63 '55. (MLRA 9:10)

(Electric instruments)

KARANDEYEV, K.B.; MIZYUK, L.Ya.; SHTAMBERGER, G.A.

Measuring total resistance in a.c. semibalance bridges. Nauch.zap. IMA AN URSR. Ser.avtom. i izm. tekh. 5:64-82 '55. (MLRA 9:10)

(Electric resistance)

KARANDEYEV, K.B.; KRIPYAKEVICH, R.I.

Problems in controlling the shapes of cylindrical objects.
Nauch.zap. IMA AN URSR. Ser.avtom. i izm. tekh. 5:83-97 '55.
(MLRA 9:10)

(Machine-shop practice) (Measuring instruments)

KARANDEYEV, K. B.

112-1-1117

Translation from: Referativnyy Zhurnal, Elektrotekhnika, 1957, Nr 1, pp. 175-176 (Ukrainian SSR)

AUTHORS: Karandeyev, K.B., Sogolovskiy, Ye. P.

TITLE: Feedback in Amplifiers with a Rotary Converter (Obratnaya svyaz' v usilitelyakh s elektromekhanicheskim preobrazovatelem)

PERIODICAL: Nauch. zap. In-ta mashinoved. i avtomatiki. AN UkSSR, 1955, Nr5, pp. 98-108.

ABSTRACT: The influence of negative feedback upon the parameters of an amplifier with a rotary converter of input voltage is investigated. Similar amplifiers have been in use for about 20 years for measuring low d-c voltages, replacing d-c amplifiers which had a low stability. It is demonstrated that negative voltage feedback (used usually with large internal resistances of the source of the measured voltage and of the output indicating device), and also the

Card 1/3

Feedback in Amplifiers with a Rotary Converter. (Cont.)

infrequently used current negative feedbacks, embracing the whole amplifier together with the converter at the input when the feedback penetrates deep enough, reduces measurement errors, caused not only by the amplifier or by the instability of its power supply, but also errors caused by the instability of the parameters of the converter: porosity of the contacts and the magnitude of its contact resistance. Formulas of the relative error of the system are derived for both cases of negative feedback. It is demonstrated that in both cases the main source of error is the instability of the resistance of the voltage divider of the negative feedback. Also, formulas for the input and output resistance of the amplifier in the presence of negative feedback are derived. The introduction of an average (integrating) circuit at the amplifier input permits to bring about a negative feedback, on the average value of the input voltage, which, on the whole, eliminates the influence of changes in porosity of the converter. A drawing of the converter with a vibrator is given; in it

Feedback in Amplifiers with a Rotary Converter. (Cont.)

the application of a system of nonpolarized type of excitation and also of a separate screening of this system and of the converter's contacts has greatly reduced the influence of the level of converter noise upon the amplifier. A basic schematic diagram of a 4-stage resistance-coupled battery amplifier with a rotary converter at the input and a cathode output on the transformer is presented. A generator feeds the converter. Diagrams of the influence of changes in the supply voltages on the amplifier's sensitivity demonstrate its sufficient stability. With such amplifiers it is possible to measure input voltages from 10 μv with input resistance equal to 10 megohms. The frequency range of the amplifier is from d-c up to about one tenth of the excitation frequency.

E.A.G.

Card 3/3

KARANDEYEV, K.B., MIZYUK, L.Ya., SHTAMBERGER, G.A.

Separate measurement of active and idle components of complex resistances. Dop. AN URSR no.5: 458-461 '55. (MLRA 9:3)

1. Institut mashinoznavstva ta avtomatiki AN URSR. Predstaviv diysniy chlen AN URSR G.M. Savin.
(Electric resistance)

USSR/Automatics and telemechanics-nonlinear elements FD-2763

Card 1/2 Pub. 10 - 8/11

Author : Karandeyev, K. B.; Sinitskiy, L. A. (L'vov)

Title : A method for calculating the transient processes in circuits containing conditionally nonlinear elements

Periodical : Avtom. i telem., 16, Sep-Oct 1955, 483-487

Abstract : The authors propose a method of calculation of transient processes in circuits with conditionally nonlinear elements, which is based on the replacement of nonlinear element by equivalent linear circuit. As an example he considers the transient process in a nonlinear bridge stabilizer. He points to the possibility of improving the character of transient processes because of the change of the stabilizer circuit scheme. Eight references: e.g. Prof. K. M. Polivanov, editor, Fizicheskiye osnovy elektrotekhniki [Physical principles of electrical engineering], State Power Press, 1950; B. S. Sotskov, "Thermistors and their application in circuits," Avtom. i telem., 9, No 1, 1948; F. Ye. Temnikov, R. R. Kharchenko, Elektricheskiye izvereniya neelektricheskikh velichin [Electrical measurement of nonelectrical quantities], State Power Press, 1948; S. A. Ginzburg, "Calculation of the nonlinear bridge," Trudy MEI, No 8, 1952; M. I. Kontorovich, Operatsionnoye ischisleniye i nestatsionarnyye yavleniya v elektricheskikh tsepyakh [Operator

calculus and nonsteady phenomena in electrical circuits], GITTL, 1949; M. A. Topchibashev, "Results of study of volt-ampere characteristics of certain nonlinear resistors," Avtom i telem., 10, No 1, 1949.

Institution : -

Submitted : Jan 21, 1954

KARANDEYEV, K.B.

SIGORSKIY, Vitaliy Petrovich; SINITSKIY, Lev Aronovich; KARANDEYEV, K.B., professor, redaktor; ZIL'BAN, M.S., redaktor izdatel'stva; SIVACHENKO, Ye.K., tekhnicheskiy redaktor

[Magnitoelectric ratiometers] Magnitoelektricheskie logometry. Pod red. K.B. Karandeeva. Kiev, Izd-vo Akad. nauk USSR, 1956. 196 p. (MLRA 10:5)

(Electric measurements)

USSR/Physics of the Earth - Geophysical Prospecting, 0-5

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 36463

Author: Karandeyev, K. B., Mizyuk, L. Ya.

Institution: None

Title: On New Automatic Measuring Apparatus for Electric Prospecting, with Direct Current Methods

Original Periodical: Razvedka i okhrana nedr, 1956, No 1

Abstract: Two instruments were developed, which make it possible to measure the emf in rocks and under complicated conditions, for example, when prospecting for ore deposits, when the transfer resistances vary from fractions of an ohm to 10^6 ohms at a considerable level of noise from stray telluric currents, from induction, etc. On the basis of these instruments it is proposed to build an electric prospecting station. The first instrument is a high speed automatic electronic compensator (EK), operating on the principle of static compensation. The uncompensated part of the measured

USSR/Physics of the Earth - Geophysical Prospecting, O-5

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 36463

Abstract: voltage is transformed by a vibrator transformer into a pulsating voltage which is amplified and is used to control with the aid of a phase-sensitive stage and a reversible motor, the displacement of the carriage of a slide wire resistance, a pen, and the pointer of the indicating instrument until a balance is established. The voltage across the terminals MN with and without current flowing in the circuit AB are automatically recorded alternately every 30 seconds, with a pen on a paper chart 100 mm wide, and this makes it possible to eliminate the effect of the interference. The electronic compensator has 6 measurement ranges for voltage, from 1.5 to 500 mv, and 6 ranges for current, from 15 to 5,000 ma. The input resistance of the electronic null indicator is 250,000 ohms. The reduced relative error of the measurement does not exceed 2%. The electronic compensator consists of 2 blocks weighing 10 kg each and a power pack weighing 3.4 kg. The electronic compensator is fed from a 6-volt storage battery. The current consumption does not exceed 3.5 amperes. Provision is made in the electronic compensator for compensation of the polarization with an adjustment limit of ±350 mv. The second instrument is an electronic

Card 2/4

USSR/Physics of the Earth - Geophysical Prospecting, 0-5

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 36463

Abstract: automatic compensator, which amplifies the measured voltage with a d-c electronic amplifier and which records automatically, in sequence, by means of a galvanometer of the GN-53 type, on a standard motion picture film, the voltage across the terminals MN with and without current flowing in the circuit AB; the instrument also records the zero level with the aid of a second galvanometer. It also records the current in the circuit AB. To interpret the results on the film, a type TPU-1 enlarger is used. The electronic automatic compensator has a scale 60 mm long for visual control. The electronic automatic compensator has 6 measurement ranges for voltage, from 1.5 to 500 mv, and 6 for current from 6 to 2,000 ma. The input resistance of the instrument reaches several tens of megohms, permitting normal operation at practically all values of transfer resistance. The winding mechanism ensures the advance of the film for 40-45 minutes with one winding. The instrument with the dry cells for its supply does not weigh more than 13 kg. The electronic automatic compensator has a lower inertia, a lower weight, and smaller dimensions than the electronic compensator, but unlike the

Card 3/4

KARANDEYEV, K. B.

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 7, p 174 (USSR) 15-57-7-9935

AUTHORS: Karandeyev, K. B., Mizyuk, L. Ya.

TITLE: Automatic Measuring Instrument for Direct Current Electrical Geophysical Exploration (Avtomaticheskaya izmeritel'naya apparatura dlya geofizicheskoy razvedki postoyannym tokom)

PERIODICAL: Novosti neft. tekhn. Geologiya, 1956, Nr 3, pp 28-31

ABSTRACT: The Institute of Machine Science and Automatics of the Ukrainian SSR has developed two models of an instrument for automatic measurement of the voltage and current in electrical exploration. The first model is based on the principle of automatic electronic compensator. The measured voltage is balanced against the voltage obtained from the rheostat. If there is a lack of balance, the difference in these voltages is

Card 1/2

Automatic Measuring Direct Current (cont.) 15-57-7-9935

transformed into an alternating current, is amplified, and acts on the servomotor through a phase-sensitive cascade. The motor, revolving, moves the rheostat carriage and the pen and needle of the indicator until the state of balance is restored. The voltage and current are recorded with a pen on a paper ribbon 1800 mm wide. The initial resistance of the instrument amounts to some tens of megohms. The instrument is fed by a 6-volt storage battery. Total weight of the instrument is 13.4 kg. The second model is also based on the principle of automatic electronic compensation. The difference between the measured voltage and the part of the rectified outgoing voltage is supplied to the booster from the vibrator at the input. The outgoing voltage is rectified by the same vibrator. Current and voltage are recorded on standard motion picture film by means of a type GH-53 galvanometer. The initial resistance of the second model is not less than 2.5 megohms. The film is stretched by means of a spring mechanism. This model is fed by dry batteries; it is in the form of a suitcase and weighs 13 kg. Diagrams and photographs of the two models are included.

Card 2/2

N. I. Voskoboynik

KARANDEYEV, K.B.; MIZYUK, L.Ya.

New automatic measuring apparatus for electrical prospecting using direct current. Razved.i okh.nedr 22 no.1:36-44 Ja '56. (MLRA 9:5)

(Prospecting--Geophysical methods)(Electric instruments)

KARANDEYEV, K.B.; MIZYUK, L.Ya.; SOGOLOVSKIY, Ye.P.; SHTAMBERGER, G.A.

The ESK-1 electrical prospecting automatic compensator with direct reading. Razved.i okh.nedr 22 no.7:39-49 Jl '56.
(MLRA 9:11)

1. Institut mashinovedeniya i avtomatiki Akademii nauk USSR.
(Prospecting--Geophysical methods) (Electric instruments)

Translation U-3,053,900, 30 Apr 57

Karandeyev, K. B.

124-1957-10-11273

Translation from: Referativnyy zhurnal, Mekhanika, 1957, Nr 10, p 15 (USSR)

AUTHORS: Karandeyev, K. B., Bobkov, Yu. N.

TITLE: Moment-Free Servo Systems and Their Gauges (Bezmomentnyye sledyashchiye sistemy i ikh datchiki)

PERIODICAL: Nauch. zap. L'vovsk. politekhn. in-t, 1956, Nr 36, pp 125-135

ABSTRACT: The paper describes basic principles of certain photoelectric cell gauges, used in the construction of moment-free servo systems, which do not require any structural changes in the actuating shaft. The gauges are applicable to systems with optical reading of the indicator position on the scale. The principal types of gauges are classified into two groups: 1) the impulse-proportional, and 2) the time-impulsative; in the latter class two designs types are considered. A comparative evaluation of the quality of the various moment-free gauges is given.

G. M. Ulanov

Card 1/1

KARANDEYEV, Konstantin Borisovich; SINITSYN, B.S., kandidat tekhnicheskikh nauk, otvetstvennyy redaktor; KOTLYAROV, Yu.L., redaktor; SARANYUK, T.V., tekhnicheskiy redaktor

[Direct current galvanometers; theory and practice] Galvanometry postoiannogo toka; teoriia i primenenie. [L'vov] Izd-vo L'vovskogo univ., 1957. 168 p. (MLRA 10:6)
(Galvanometer)

KARANDEYEV, K. B.

SOBOLEVSKIY, Konstantin Mikhaylovich; SHAKOLA, Yuriy Andreyevich; KARANDEYEV, K.B., red.; AFONINA, G.P., red.izd-va; RAKHLINA, N.P., tekhn.red.

[Protection of alternating current impedance bridges] Zashchita mostov peremennogo toka. Pod red. K.B.Karandeeva. Kiev, Izd-vo Akad.nauk USSR, 1957. 175 p. (MIRA 11:1)

1. Chlen-korrespondent AN USSR (for Karandeyev).
(Electric instruments)

КАРАНДЕЕВ, К.Б.

VISHENCHUK, Igor' Mikhailovich; SOGOLOVSKIY, Yevgeniy Panteleymonovich; SHVETSKIY, Bentsion Yosifovich; KARANDEYEV, K.B., red.; KOSTIYENKO, A.I., red.; MURASHOVA, N.Ya., tekhn.red.

[The electron-beam oscillograph and its use in measuring] Elektronno-luchevoi ostsillograf i ego primenenie v izmeritel'noi teknnike. Pod red. K.B.Karandeeva. Moskva, Gos.izd-vo tekhniko-teoret.lit-ry, 1957. 220 p. (MIRA 10:12)
(Cathode ray tubes) (Measuring instruments)

KARANDEYEV, K.B.; MIZYUK, L.Ya.; SHTAMBERGER, G.A.

Automatic electronic compensators used in geophysical measurements. Avtom. kont. i izm. tekh. no.1:5-20 '57. (MIRA 11:6)
(Electronic measurements)
(Prospecting)

KARANDEYEV, K.B.; MIZYUK, L.Ya.; ZUBOV, V.G.

Using pointer instruments in solving the solution $a = \frac{y}{x}z$.
Avtom. kont. i izm. tekh. no.1:21-29 '57. (MIRA 11:6)
(Electronic analog computors)

86116

9.6000 (1024, 1099, 1159)

S/112/59/000/012/042/097
A052/A001

Translation from: Referativnyy zhurnal, Elektrotekhnika, 1959, No. 12, p. 140, # 24851

AUTHORS: Karandeyev, K.B., Grinevich, F.B.

TITLE: Matching the Parameters of a Balanced 4-Arm Direct Current Bridge

PERIODICAL: V sb.: Avtomat. kontrol' i izmerit. tekhn. No. 1, Kiyev, AN UkrSSR, 1957, pp. 30-53

TEXT: A calculation is given and diagrams are plotted for selecting parameters of a 4-arm direct current bridge under condition of securing the minimum error of measurement. At the same time the selection of the optimum bridge parameters (matching) is made only on the basis of that part of the limiting error which depends on the absolute values of parameters. Cases of matching the bridge parameters when measuring very low ($R_x < 0.1$ ohms), low ($R_x < 100$ ohms) high ($R_x > 100$ ohms) resistances are considered, as well as the operational conditions of the bridge at a critical relaxation of galvanometers. Correspondingly formulae are derived and diagrams are plotted which make possible: a) to determine bridge

Card 1/2

86116

S/112/59/000/012/042/097
A052/A001

Matching the Parameters of a Balanced 4-Arm Direct Current Bridge

parameters by a given and by the least possible error of measurement; b) to solve the problem of finding limiting values of resistances measured on a 4-arm bridge with a desired error. It is shown that a matched 4-arm bridge enables one to measure very low resistances with a high accuracy (e.g. to measure R_x = 0.001 ohm with an error of 0.05%).

V.A.B.

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

KARANDEYEV, K.B.; GRINEVICH, F.B.

On the automation of alternating-current bridges for measuring complex resistances. Avtomatyka no.1:82-87 '57. (MLRA 10:5)

1. Institut mashinoznavstva to avtomatiki AN URSR.
(Electric measurements)

Karandeyev, K.B.

KARANDEYEV, K.B., doktor tekhn.nauk; KLISTORIN, I.F., kand.tekhn.nauk.

Automatizing the graduation and testing. Priborostroenie no.10:15-17 O '57. (MIRA 10:11)

1. Chlen-korrespondent Akademii nauk USSR (for Karandeyev). (Instrument industry) (Automatic control)

84500
S/112/59/000/014/083/085
A052/A001

9,6000 (1012, 1024, 1099)

Translation from: Referativnyy zhurnal, Elektrotekhnika, 1959, No. 14, p. 270, # 30491

AUTHORS: Karandeyev, K. B., Shvetskiy, B. I.

TITLE: Infrasonic Measuring Apparatus

PERIODICAL: Nauchn. zap. L'vovsk. politekhn. in-t, 1957, No. 62, pp. 123-128

TEXT: A set of intrasonic equipment has been developed. The set consists of a measuring amplifier, an analizer, an electron-beam oscillograph, a device for 4-channel magnetic recording and reproduction, and a generator. The apparatus enables one to carry out comprehensive investigations of electric, infrasonic and sonic oscillations. By a careful selection of the circuit elements, the magnitude of the negative feedback and the feed circuits of the measuring amplifier (amplifies weak signals by 10^5 times), a handy device has been designed with high metrological characteristics: 1) frequency band: 0.5 cycles-20 kc at a non-uniformity of $\pm$ 3%; 2) range of measuring voltages: 10 microvolts-300 volts; 3) measurement error does not exceed $\pm$ 1.5%; 4) natural noise voltage at a closed input is 2 microvolts, at an open input 10 microvolts. P. Ye. K.

Translator's note: This is the full translation of the original Russian abstract.

Card 1/1

POKROVSKIY, B.G.; KARANDEYEV, K.B., prof., doktor tekhn.nauk, red.

[Some problems in designing multichannel high-speed high-accuracy telemetering systems] Nekotorye voprosy postroeniia mnogokanal'nykh bystrodeistvuiushchikh teleizmeritel'nykh sistem povyshennoi tochnosti. Pod red. K.B. Karandeeva. L'vov, L'vovskii politekhn. in-t, 1958. 57 p. (MIRA 12:2)

1. Chlen-korrespondent AN SSSR (for Karandeyev).
(Telemetering)

SIVOLAPOV, Vsevolod Petrovich; KARANDEYEV, Konstantin Borisovich; MIZYUK, Leonid Yakovlevich; GONCHARSKIY, Vladimir Nikolayevich; LYUSTIBERG, V.F., inzh., ved. red.; SHTEYNBOK, G.Yu., inzh., ved. red.; SOROKINA, T.M., tekhn. red.

[MFI phase meters. Light-sensitive EAK-3 automatic compensators for electric prospecting] Fazometr MFI. Fotoregistriruiushchii elektrorazvedochnyi avtokompensator EAK-3. [By] K.B.Karandeev i dr. Moskva, Filial Vses. in-ta nauchn. i tekhn. informatsii, 1958. 25 p. (Peredovoi nauchno-tekhnicheskii i proizvodstvennyi opyt. Tema 35. No.P-58-27/4) (MIRA 16:3)
(Electric prospecting--Equipment and supplies)
(Electric measurements)

KARANDEYEV, Konstantin Borisovich; SHVETSKIY, Bentsion Iosifovich; SOGOLOVSKIY, Yevgeniy Panteleymonovich; MORDVINOVA, N.P., inzh., ved. red.; SOROKINA, T.M., tekhn. red.

[Universal a.c. bridge]Universal'nyi most peremennogo toka. Moskva, Filial Vses. in-ta nauchn. i tekhn. informatsii, 1958. 18 p. (Peredovoi nauchno-tekhnicheskii i proizvodstvennyi opyt. Tema 35. No.P-58-46/7) (MIRA 16:3)
(Electric measurements) (Bridge circuits)

PHASE I BOOK EXPLOITATION 1171

Karandeyev, Konstantin Borisovich, and Mizyuk, Leonid Yakovlevich

Elektronnaya izmeritel'naya apparatura dlya geofizicheskoy razvedki metodami postoyannogo toka (Electronic Measuring Equipment for Geophysical Prospecting Using Direct Current Methods) Moscow, Gosgeoltekhizdat, 1958. 287 p. 5,000 copies printed.

Ed.: Godovikova, L.A.; Tech. Ed.: Krynochkina, K.V.

PURPOSE: The book may be useful to engineers and geologists engaged in prospecting for coal, oil, iron ore and other deposits.

COVERAGE: According to the authors, the book is an attempt to generalize and systematize the information on measuring equipment used in geophysical prospecting by direct-current methods. The equipment described in the book was developed by IMA (Institute of Mechanical Engineering and Automation of the USSR Academy of Sciences). In 1954 the Institute developed two types of portable automatic instruments with photographic and pen recorders. In 1955, upon the suggestion of A.S. Semenov, A.V. Veshev, and A.F. Fokin, the Institute also developed direct-reading instruments.

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Electronic Measuring Equipment (Cont.) 1171

At the same time a working model of a two-channel high-sensitivity compensator for prospecting by telluric currents was tested and is being used for further development of similar measuring instruments. In 1956 the Institute developed a portable miniature single-channel oscillograph for prospecting by the dipole sounding method. Pioneers in the development of instruments for prospecting by telluric currents and dipole sounding methods were A.M. Alekseyev, A.M. Zagarmistr, and M.N. Berdichevskiy, members of NIIGR (Scientific Research Institute of Geophysical Prospecting Methods). The following members of IMA participated in the development of measuring instruments for geophysical prospecting: G.A. Shtamberger, V.G. Zubov, V.N. Goncharskiy, I.G. Mityukhin, L.D. Gik, I.G. Kuznetsov, E.V. Sheremet'yev, S.K. Kuzovkin, L.V. Traube, A.I. Antonov, B.M. Zaydel', and A.F. Novitskiy. The authors thank N.N. Anikeyeva, N.M. Kogan, O.I. Podvolotskaya, and E.V. Sheremet'yev for their help in preparing the manuscript and A.M. Alekseyev for reviewing the text. There are 89 references, of which 79 are Soviet (including 1 translation), 5 English, 3 German, and 2 French.

Card 2/4

AVAILABLE: Library of Congress

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Card 4/4

SOV/146-1-1-4/22

AUTHOR: Karandeyev, K.B., Corresponding Member Doctor of Technical Sciences; Vishenchuk, I.M., Senior Scientific Collaborator; Sheremet'yev, V.A., Senior Engineer

TITLE: An Electric Phase Meter for Measuring and Oscillographing the Rotor Coasting Angle of Synchronous Machines (Elektronnyy fazometr dlya izmereniya i ostsillografirovaniya ugla vybega rotora sinkhronnykh mashin)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy - Priborostroyeniye, 1958, Nr 1, pp 22-27 (USSR)

ABSTRACT: The paper proposes a circuit for a phase meter to measure and oscillograph with little phase angle lag, which is essentially free from the normal defects. The lag in this circuit is 0.2 m/sec, it narrows the measuring limits of the angle to 3-4 electric degrees. The semi-variable resistances of 100 k ohm in the control grid circuit of the phantastron generator is for correcting sensitivity and makes it possible to

Card 1/4

Lvov Polytech Inst.

An Electric Phase Meter for Measuring and Oscillographing the Rotor Coasting Angle of Synchronous Machines

establish nominal phase meter measuring limits. The paper contains an accurate description of the phase meter switch circuit and its functions. Then comes an analysis of the errors of this phase meter, in accordance with the nature of the effects on measuring instruments. Three forms are investigated. 1) Time displacements which occur during the transmission of reference voltage and the transmitter signal in the phase meter channels; 2) The sensitivity instability of the phase meter which depends on the steepness of the sawtooth voltage, and the transmission factor of the balance-amplifier; 3) The non-linearity of the sawtooth voltage, when using the input measuring unit with a linear scale, which can also lead to errors. The paper also notes as error sources, phase displacement of reference voltage to the power transformer; the starting time of multi-vibrators, the pulse length of multi-vibrators; the electrodynamic power between the contacts of a closed electron key and the displacement

An Electric Phase Meter for Measuring and Oscillographing the Rotor Coasting Angle of Synchronous Machines

of the zero point at the balance amplifier. Technical characteristics of the phase meter are: 3 limits for angle measurement ± 180°, ± 90°, ± 45°. Indicating instrument is a microammeter for ± 50 micro-amps. Fixing the angle on the oscillograph takes 0.02 secs, delay in oscillographing is practically zero. The phase meter weighs approx. 6 kg. Power consumption is not over 50 watts. The device is fed with 110 or 220 volts, at 50 cps. The phase meter measures and oscillographs the rotor coasting angle in synchronous machines within limits of ± 180 electric degrees with an accuracy of up to 0.5° plus 1%. The phase meter works harmoniously with the electromagnetic phase transmitter, which transmits the electrodynamic power, and voltage in pulse form. There are 1 circuit diagram, 6 diagrams, 1 table and 5 Soviet references.

An Electric Phase Meter for Measuring and Oscillographing the Rotor Coasting Angle of Synchronous Machines SOV/146-1-1-4/22

ASSOCIATION: L'vovskiy politekhnicheskiy institut (Lvov Polytechnical Institute)

Card 4/4

SOV/115-58-1-26/50

AUTHORS: Karandeyev, K.B., and Shtamberger, G.A.

TITLE: On a Schematic Diagram for Measuring the Active Component of Combined Resistance (Ob odnoy skheme izmereniya aktivnoy sostavlyayushchey kompleksnogo soprotivleniya)

PERIODICAL: Izmeritel'naya tekhnika, 1958, Nr 1, pp 53 - 55 (USSR)

ABSTRACT: The authors suggest a diagram which would be convenient for many cases of technical measurements, and in particular for measuring non-electrical values in the control of production in the radio industry. The method permits measurements of the resistance components separately and independently. The suggested diagram (shown in Figure 1) presents in principle an unbalanced bridge, with an electronic differential a.c. indicator (which is not sensitive to phases) with an input resistance of several megohm. It

Card 1/2

On a Schematic Diagram for Measuring the Active Component of Combined Resistance

provides constant sensitivity in a sufficiently wide range of the phase angle changes, since the values of the input resistances on the indicator will not depend on the interrelation between the reactive and the active components of the combined resistance being measured. There are 2 diagrams, 1 graph and 3 Soviet references.

1. Radio equipment--Production 2. Electrical equipment--Resistance
3. Recording devices--Performance

S/169/62/000/003/028/098
D228/D301

AUTHORS: Karandeyev, K. B., Mizyuk, L. Ya., and Zubov, V. G.

TITLE: Directly measuring the apparent resistance of rocks in direct-current electrical prospecting

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 3, 1962, 26, abstract 3A217 (Dokl. L'vovsk. politekhn. in-ta, 2, no. 2, 1958, 94-97)

TEXT: The authors give the principles of the layout of calculation-determining equipment for directly measuring the apparent resistance, at any value of the coefficient K of the measuring apparatus. The scheme's basic element is a millivoltmeter with an alternating additional resistance. To obtain a high inlet resistance the authors recommend the assembly of the millivoltmeter according to the electronic autocompensator scheme. The meter can be directly graduated in ρ_k values, which ensures scale uniformity. [Abstracter's note: Complete translation.]

Card 1/1

KARANDEYEV, K.B. [Karandieiev, K.B.]; SHTAMBERGER, G.A. [Shtamberher, H.A.]

Generalized equation for balanced and unbalanced alternating current bridge circuits [with summary in English]. Dop. AN URSR no.3:276-279 '58. (MIRA 11:5)

1.Chlen-korrespondent AN USSR (for Karandeyev).
(Wheatstone bridge)

KARANDEYEV K.

AUTHORS: Gel'fond, A., Karandeyev, K., Chistyakov, N., Shumilovskiy, N., Levin, M., Yermakov, V., Kobrinskiy, N., and others 105-58-4-35/37

TITLE: V. N. Mil'shteyn (Deceased)

PERIODICAL: Elektrichestvo, 1958, Nr 4, pp. 94-94 (USSR)

ABSTRACT: Obituary notice. On January 9, 1958 Professor Viktor Naumovich Mil'shteyn, Dr. of Technical Sciences died at the age of 44. After he finished the Moskau Institute for Power Engineering he worked in industry and as pedogogue. In 1938 he became Candidate and in 1945 Dr. of Technical Sciences. Since then he was Director of the Chair for Electric and Automatic Apparatus at the Moskau Institute for Aviation imeni Ordzhonikidze. In 1949 he changed over to the Scientific Research Institutes for Systems at the Committee for Standards, Measures and Measuring Apparatus. At the same time he worked as pedogogue at the Penza Institute for Industry and then at the Moskau Electrotechnical Institute for Telecommunications. He wrote many

Card 1/2

V. N. Mil'shteyn (Deceased) 105-58-4-35/37

publications and many inventions were made by him. His scientific work included the field of theoretical electrical engineering and radio engineering as well as the problems on the theory and the calculation of measuring instruments, automation elements and electromagnetic mechanisms. Before his death he had his monography "The Energetic Relations in Electrical Measuring Instruments" printed. There are 1 figure.

AVAILABLE: Library of Congress

1. Obituary

Card 2/2

SOV/115-58-5-23/36

AUTHOR: Karandeyev, K.B. and Mizyuk, M.G.

TITLE: Cascade Compensatory Circuits (Kaskadnyye kompensatsionnyye skhemy)

PERIODICAL: Izmeritel'naya tekhnika, 1958, Nr 5, pp 50-53 (USSR)

ABSTRACT: B.A.Seliber and S.G.Rabinovich designed a semi-automatic compensator circuit in which the emf being measured is only partially compensated by a circuit with adjustable resistance, the non-compensated part of the emf being measured by a photo-compensator, i.e. a new double-compensation circuit. Other types of double and cascade compensating circuits are analysed and related to the conditions in which they can be most suitably used. The paper indicates that the transition to double and cascade compensatory circuits enables a series of important qualities to be obtained from the measuring device: greater sensitivity and accuracy in measurement, greater input resistance, faster measurements and a greater stability.

Card 1/2

Cascade Compensatory Circuits

There are 3 circuit diagrams and 8 references, 6 of which are Soviet and 2 German.

Card 2/2

BARDACHEVSKIY, V.T.; VELICHKO, Yu.T.; VLASENKO, N.V.; GUBENKO, T.P.; DRYAKHLOV, A.I.; KARANDEYEV, K.B.; KARNYUSHIN, L.V.; MAKSIMOVICH, N.G.; SOKOL'NITSKIY, G.Z.

M.G. Liukov. Izv. vys. ucheb. zav.; energ. no.5:127 My '58. (MIRA 11:8)

(Liukov, Mikhail Grigor'evich, 1915-1958)

21-58-7-8/27

AUTHORS: Alfer'yeva, N.G. and Karandeyev, K.B., Corresponding Member of the AS UkrSSR

TITLE: On the Stability of High-Voltage Germanium Rectifiers of the DG-Ts Type (O stabil'nosti vysokovol'tnykh germaniyevykh vypryamiteley tipa DG-Ts)

PERIODICAL: Dopovidi Akademii nauk Ukrains'koi RSR, 1958, Nr 7, pp 721-723 (USSR)

ABSTRACT: The authors present the results of an investigation of the artificial aging process of point high-voltage germanium rectifiers of the DG-Ts type under effect of electric load and cyclic changes in temperature from 20 - 50 - 20°C. The aging process is not eliminated in the investigated rectifiers, although they are more stable than the cuprous oxide rectifiers. On the basis of the observed regularities in the changes of the volt-ampere characteristics during aging process, a method is proposed for compensating the errors of measuring circuits which arise because of instability of the rectifier parameters in time. This method consists in self-compensation, i.e., parameters of the circuit are so chosen that the changes in

Card 1/2

On the Stability of High-Voltage Germanium Rectifiers of the DG-Ts Type

direct and reversed resistances (currents) are balanced. There are 3 circuit diagrams and 3 Soviet references.

ASSOCIATION: L'vovskiy politekhnicheskiy institut (L'vov Polytechnic Institute)

SUBMITTED: January 13, 1958

NOTE: Russian title and Russian names of individuals and institutions appearing in this article have been used in the transliteration.

1. Dry disk rectifiers--Stability 2. Germanium--Effectiveness
3. Rectifiers--Circuits

SOV/21-58-10-4/27

AUTHORS: Karandeyev, K.B., Corresponding Member of the AS USSR and AS UkrSSR, and Gik, L.D.

TITLE: The Damping of Inertia Vibrometric Devices (Uspokoyeniye inertsionnykh vibroizmeritel'nykh priborov)

PERIODICAL: Dopovidi Akademii nauk Ukrains'koi RSR, 1958, Nr 10, pp 1045 - 1048 (USSR)

ABSTRACT: When inertia vibrometric devices are designed to obtain minimum frequency errors, the values of frequency approaching the resonance value, it is necessary to increase the damping of the seismic system to a value close to the critical one. On the contrary, the damping should be of minimum value to obtain minimum phase distortions at the same frequencies. The authors derive a system of 2 equations containing two unknowns: x (the ratio of the oscillation frequency of an inertia mass to the resonance frequency) and ε (the degree of damping). Insofar as the analylitical solution of this system, in general, is complicated, the authors propose a graphic solution. For this purpose they draw a nomogram for determining the optimum damping degree and maximum possible value of the resonance frequency. The following particular cases are considered in the paper: 1) the choice of the op-

Card 1/2

timum value of a vibration pickup when the amplitude and phase errors of the vibrometer are not to exceed a certain value; 2) the choice of the same optimum value when the phase distortions of the vibrometer may be negelcted, and 3) the choice of the maximum natural frequency of vibration of an inertia system, at which the vibration pickup errors at the lower limiting frequency of measurement attain the permissible values. There are: 1 graph, 1 table and 1 Soviet reference.

ASSOCIATION: L'vovskiy institut mashinovedeniya i avtomatiki AN UkrSSR (L'vov Institute of Machine Study and Automation, of the AS UkrSSR)

SUBMITTED: April 18, 1958

NOTE: Russian title and Russian names of individuals and institutions appearing in this article have been used in the transliteration

1. Vibration--Measurement 2. Machines--Control systems
3. Mathematics

KARANDEYEV, K.B.

SOV/144-58-9-18/18

AUTHOR: Gikis, A. F., Candidate of Technical Sciences, Docent

TITLE: Inter-University Scientific Conference on Electric Measuring Instruments and Technical Means of Autoxation (Mezhvuzovskaya nauchnaya konferentsiya po elektroizmeritel'nym priboram i tekhnicheskim sredstvam avtomatiki)

PERIODICAL: Izvestiya Vysshikh Uchebnykh Zavedeniy, Elektromekhanika, 1958, Nr 9, pp 130-135 (USSR)

ABSTRACT: The conference was held at the Leningradskiy elektrotekhnicheskiy institut imeni V. I. Ul'yanova (Lenina) (Leningrad Electro-technical Institute imeni V. I. Ul'yanov (Lenin)) on November 11-15, 1958. The representatives of eleven higher teaching establishments and three research institutes participated and a large number of specialists of various industrial undertakings were present.

Corresponding Member of the Ac.Sc. USSR Professor K. B. Karandeyev presented the paper "Application of semi-conductors for metering purposes".
Assistant G. N. Novopashennyy presented the paper "Metering amplifiers with semi-conductor triodes".
Docent Ye. V. Novosel'tsev, Assistants N. A. Smirnov, Ye. Ye. Afanas'yev and Ye. P. Ugryumov (Leningrad Electrotechnical Institute) presented the paper "Semi-conductor precision instrument for measuring the frequency by the method of counting impulses". The described instrument enables measuring the frequency of harmonic oscillations which occur once only; the frequency of the input oscillations is amplified 2⁸ times and the error in measurement does not exceed 2×10^{-5}.
A number of papers were presented on measuring and producing instruments based on recently discovered physical phenomena.

KARANDEYEV, K.B.

SOV/143-58-10-20/24

AUTHORS: Andriyevskiy, A.I., Antanovich, A.V., Bogatyrev, N.A., Glushchenko, I.P., Gubenko, T.P., Zanora, Ye.P., Karandeyev, K.B., Lukin, V.I., Lukin, N.I., Maksimovich, N.G., Mozer, V.F., Petrenko, S.I., Papernyy, Ye.A., Privalova, K.A., Sitnitskiy, Yu.I., Stasikov, Ya.T., Shchepankevich, B.P., Chuchman, T.S., Yagello, I.M., Brilinskiy, B.M., and others

TITLE: G.Ye. Krushel', Deceased

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Energetika, 1958, Nr 10, p 147 (USSR)

ABSTRACT: This is an obituary of Doctor of Technical Sciences, Professor Georgiy Yevgen'yevich Krushel' of the L'vovskiy politekhnicheskiy institute (L'vov Polytechnic Institute). Krushel' was born in Moscow in 1912 as the son of an engineer. He died on July 20, 1958 because of an accident. He graduated in 1931 from the "Proftekhshkola". While working in the industry, G. Ye. Krushel' studied at the Khar'kovskiy mekhaniko-mashinostroitel'nyy institut (Khar'kov Institute of

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SOV/143-58-10-20/24

extensively prime movers for the feed pumps of high-power boiler-turbine units. Besides research work, Krushel' devoted his attention to the training of engineers in his field. The Soviet Union lost one of its foremost scientists. There is 1 photograph.

Card 3/3

SOV/103-19-9-8/11

AUTHORS: Karandeyev, K. B., Sinitskiy, L. A. (L'vov)

TITLE: On Selectivity of Rectification Measuring Devices (K voprosu ob izbiratel'nosti vypryamitel'nykh izmeritel'nykh ustroystv)

PERIODICAL: Avtomatika i telemekhanika, 1958, Vol 19, Nr 9, pp 892-895 (USSR)

ABSTRACT: This is an investigation of the selectivity of rectifying measuring devices. It is assumed that the measured voltage and the noise voltage are sinusoidal functions of time with non-multiple frequencies. Formulae for the determination of errors in the usual rectifying apparatus and in the phase-shift sensitive rectifying apparatus with different forms of the control signal are obtained. Some known principles form the theory of selectivity of rectifying devices are given as these are not mentioned in publications on electric measurements. The influence of the noise voltage level on the measuring device is not investigated. As a summary the following facts were ascertained: 1) The elements of the rectifying system have the characteristic feature of suppressing noises by a signal, as long as the noise signal is smaller than that of the intelligence signal. 2) The suppression of the noise level by the signal becomes noticeable

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mainly, if the rectifying device is constructed according to the radio detector principle. 3) When using the radio detector with a control signal of square shape the error caused by the noise level is so small that it can be neglected, if the noise voltage amplitude is smaller than the amplitude of the control signal. There are 3 figures and 8 references, 7 of which re Soviet.

SUBMITTED: June 4, 1957

KRIP'YAKEVICH, Roman Ivanovich [Kryp'iakevych, R.I.]; KARANDEYEV, K.B. [Karandieiev, K.B.], red.; KISINA, I.V., red.izd-va; YEFIMOVA, M.I. [IEfimova, M.I.], tekhn.red.

[Controlling the shape of cylindrical parts] Kontrol' formy tsilindrychnykh detalei. Pid red. K.B.Karandieieva. Kyiv, Vyd-vo Akad.nauk URSR, 1959. 110 p. (MIRA 12:10)

1. Chlen-korrespondent AN USSR (for Karandeyev).
(Measuring instruments)

MAKSIMOVICH, Georgiy Grigor'yevich [Maksymovych, H.H.]; KARANDEYEV, K.B., red.; REMENNIK, T.K., red.izd-va; MATVIYCHUK, O.O., tekhn.red.

[Automatic control of screw-thread dimensions] Avtomatychnyi kontrol' rozmiriv riz'by. Pid red. K.B.Karandieieva. Kyiv, Vyd-vo Akad.nauk URSR, 1959. 113 p. (MIRA 12:10)

1. Chlen-korrespondent AN SSSR (for Karandeyev).
(Screw cutting)

VISHENCHUK, Igor' Mikhaylovich; SOGOLOVSKIY, Yevgeniy Panteleymonovich; SHVETSKIY, Bentsion Iosifovich; KARANDEYEV, K.B., red.; KOSTIYENKO, A.I., red.; MURASHOVA, N.Ya., tekhn.red.

[Cathode-ray oscillograph and its use for measuring] Elektronno-luchevoi ostsillograf i ego primenenie v izmeritel'noi tekhnike. Pod red. K.B.Karandeeva. Moskva, Gos.izd-vo fiziko-matem.lit-ry, 1959. 220 p. (MIRA 12:4)
(Cathode ray oscillograph)

S/194/61/000/003/002/046
D201/D306

AUTHORS: Karandeyev, K.B. and Grinevich, F.B.

TITLE: Design of A.C. bridges with independent balancing

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 3, 1961, 3, abstract 3 A13 (Tr. Konferentsii po elektr. izmereniyam i priborostr. Kiyev, AN USSR, 1959, 109-125)

TEXT: A description is given of how a differential amplitude null indicator can be applied to A.C. bridge methods. The indicator shows zero indication where voltages, having equal moduli (independent of their respective phase shifts), are applied to the twin input connections. By using a subsidiary supply voltage, it is possible to balance the bridge by independent adjustments of the components of the measured impedance. This balancing is achieved without the adjustment of one component influencing the other, which usually necessitates consecutive readjustments for the balance con-

Card 1/2

27352
S/194/61/000/003/005/046
D201/D306

3,9410

AUTHORS: Karandeyev, K.B. and Mizyuk, L.Ya.

TITLE: The design of geophysical survey equipment using D.C. methods

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 3, 1961, 12, abstract 3 A92 (Tr. Konferentsii po elektr. izmereniyam i priborostr., Kiyev, AN USSR, 1959, 481-500)

TEXT: The best results in measuring small emf's with sharply varying internal resistances are attained by using self-compensating circuits. On this basis, the Institute mashinovedeniya i avtomatiki (Institute of Sciences of Machines and of Automation) developed a set of instruments for electrical survey by the D.C. current method. 1) Electronic self-compensating device with photorecording (a second variant with paper tape recording) type ЭКА-2 (EKA-2) for continuous measurement and recording of voltages within 100 microvolt to 500 mV and of currents 1 mA - 2 A. The input res-

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The design of geophysical survey...

istance of the instrument varies between 2-5 megohms. The relative error of the order of 2%. 2) A small-dimension instrument with indirect reading for small distances between the electrodes of the operating and measuring circuits, based on an electronic self-computing circuit, with limits 1000 to 1 mV and from 3000 to 10 mA. The input resistance of the instrument 8 megohms, accuracy 1.5 - 3% depending on range. 3) A double-channel oscilloscope for recording slowly varying voltages based on the method of tellurium currents. The range of each channel is 0 - 1000 microvolts and 0 - 30 mV. Photorecording is used. Input resistance of each channel 1 megohm. Frequency distortions do not exceed 2%. 4) A digital computer instrument, self-compensating with direct read-out of $\Delta U, I_{AB}, K\rho_k$, for measuring ρ_k within the range 0.001 - 3,162,000 ohms, having an input resistance $\geq$ 8 megohm. For division a millivoltmeter with additional attenuator and switched shunts is used. The relative error depends on the range and is 1.5 - 3%. All instruments have battery supplies. [Abstracter's note: Complete translation]

Card 2/2

SOV/120-59-2-18/50

AUTHORS: Karandeyev, K.B., Gol'dgefter, V.I. and Mizyuk, M.G.

TITLE: Transistor D.C. Convertors for Measurement Amplifiers (Preobrazovateli postoyannogo toka na poluprovodnikovykh triodakh dlya izmeritel'nykh usiliteley)

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 2, pp 62-64 (USSR)

ABSTRACT: When a transistor is used as a chopper in a d.c. amplifier its performance is limited by certain defects; the equivalent circuits for the "closed" and "open" positions of the switch are shown in Figs 1a and 1b respectively. When the switch is closed the imperfections are a small series resistance R_{closed} and a voltage "pedestal" U_o. When the switch is open its terminals are shunted by a conductance g_{open} through which a leakage current I_o flows. A figure of merit for a convertor is K_{np} which measures the ratio of the fundamental component of output to the direct component of input. This index is the greater when the values of U_o, I_o and the product of the parasitic resistance and the conductance are least. A number of the junction transistors produced in the USSR have been examined and the best device from

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this point of view is the P-6A. Fig 2 shows the behaviour of the switch in the "closed" condition for various values of base current. Another defect is the delay in the establishment of the steady value of the "pedestal" voltage due to diffusion effects. For the P-6A triode the delay is of the order of 10 μ . If n-p-n triodes were used the delay should be rather less, since the mobility of the carriers (electrons) is greater in that case. The effect of temperature is comparatively slight on the behaviour of the "closed" switch, but is worse in the "open" phase, particularly at temperatures greater than 40 °C. Previous experiments (Refs 1, 2) on this same triode have shown that the residual signals are at a high level because of the absence of a clearly defined earth return path. The new circuits proposed in this paper are the single sided version of Fig 4a and a full wave circuit as in Fig 6a. The figure of merit for the first circuit should be 0.5 according to the equivalent circuit of Fig 4b, while the graph of actual performance, Fig 5, shows this to be in

fact 0.36. A corresponding index for Fig 6a should be 0.9, while the graph of Fig 7 shows it to be rather less.

Card 3/3 There are 7 figures and 3 references, 2 of which are Soviet and 1 English.

ASSOCIATION: Institut mashinovedeniya i avtomatiki AN SSSR (Institute of Machine Construction and Automation of the Academy of Sciences of the USSR)

SUBMITTED: April 14, 1958

SOV/120-59-2-19/50

AUTHORS: Karandeyev, K.B., Mizyuk, M.G. and Smirnov, N.I.

TITLE: A Transistorized D.C. Millivoltmeter (Millivol'tmetr postoyannogo toka na poluprovodnikovykh triodakh)

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 2, pp 65-67 (USSR)

ABSTRACT: The specification to which this instrument was designed called for a direct-reading, battery-driven meter with an accuracy not less than 2.5%, which covered the range from a few mV's up to 1 V with an input resistance not lower than 1 megohm. The instrument was to be small and light and to work over the range -20 to +60 °C. The best circuit for this purpose is the so-called self compensating circuit of Fig 1; this is described with design equations in Ref 2. The essential block diagram of the circuit may be described as a chopper-stabilized D.C. amplifier with high A.C. gain and overall D.C. feedback. The instrument is very bulky if valves are used and transistors are therefore preferred. The mechanical chopper works at 200 cycles per sec and the upper limit of the A.C. amplifier has been chosen as 20 kc/s. The first transistor is a type P6D which is

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chosen for its low noise properties and the rest of the amplifier consists of three P6A's in cascade. The base currents in these stages are stabilised by thermistors. The basic circuit of a compensated stage is that of Fig 3 while Fig 4 shows the behaviour of the circuit over the required temperature range. The dotted curve on this graph shows the uncompensated performance. Fig 5 shows the complete circuit of the instrument including component values. The instrument errors for three inputs 1 mv, 3 mv, and 10 mv, are shown in Figs 6 and 7 for variations in supply voltage and operating temperature respectively. The input resistance is 4 megohms, the zero drift is not worse than 20 μ V per hour, the maximum sensitivity is 10 μ V, the current consumption is 10 mA, the dimensions of the instrument are 235 x 155 x 115 mm, and its weight is 3 kg.

A Transistorized D.C. Millivoltmeter SOV/120-59-2-19/50

There are 8 figures and 5 Soviet references.

ASSOCIATION: Institut mashinovedeniya i avtomatiki AN USSR (Institute of Machine Construction and Automation of the Academy of Sciences, Ukr SSR)

SUBMITTED: February 14, 1958

Card 3/3

ALFER'YEVA, N.G.; KARANDEYEV, K.B.

Features of temperature characteristics of DG-TS point-contact germanium rectifiers. Izv. Sib. otd. AN SSSR no.3:10-17 '59. (MIRA 12:8)

1.L'vovskiy politekhnicheskiy institut, Sibirskoye otdeleniye Akademii nauk SSSR.
(Germanium diodes)

SOV/21-59-5-5/25

AUTHORS: Karandeyev, K.B., Corresponding Member of the AS UkrSSR, and Gik, L.D.

TITLE: On the Principles of Correcting Vibrometer Apparatuses

PERIODICAL: Dopovidi Akademii nauk Ukrains'koi RSR, 1959, Nr 5, pp 478-481 (USSR)

ABSTRACT: The authors show the possibility of applying circuit diagrams of electrical corrections of seismic vibrometers for the extension of the frequency range of measuring vibratory displacements lower than the resonance frequency. The basic equation for a seismic pick-up is expressed in the form of

$$\frac{y_1}{\xi_0} = v_1 = \frac{1}{\left[1 - \left(\frac{w_1}{w}\right)^2\right] - j^2 \varepsilon_1 \frac{w_1}{w}} \qquad (1)$$

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On the Principles of Correcting Vibrometer Apparatuses

(wherein y_1 is vibratory displacement of seismic mass; ξ_o is vibratory displacement of the point of suspension; w_1 is the circular frequency of the pick-up; w is circular frequency of vibrations at the suspension point; ε_1 is a degree of damping) and is used to find out the equation of normal correlation

$$v_k' = \eta \frac{v_2}{v_1} = \eta \frac{\left[1-\left(\frac{w_1}{w}\right)^2\right] - j \cdot 2\varepsilon_1 \frac{w_1}{w}}{\left[1-\frac{w_2}{w}^2\right] - j \cdot 2\varepsilon_2 \frac{w_2}{w}} \quad (2)$$

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On the Principles of Correcting Vibrometer Apparatuses

(wherein v_k is equiponderate of the correcting scheme; v_2 is the desired equiponderate of the correcting device; w_2 and ε_2 are the frequency of vibrations in the vibrometer and the degree of damping after correction; η is the coefficient of proportionality.) Another method based on application of a correcting scheme to a part of the pick-up's signal with a subsequent summing up with the rest of the signal is expressed by equation

$$v''_k = \frac{v_2 - v_1}{\eta v_1} = -\frac{1}{\eta} \frac{\frac{w_1^2 - w^2_2}{w^2} + j2 \frac{\varepsilon_1 w_1 - \varepsilon_2 w_2}{w}}{\left[1 - \left(\frac{w_2}{w}\right)^2\right] - j .2 \varepsilon_2 \frac{w_2}{w}} \qquad (3)$$

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SOV/21-59-5-5/25

On the Principles of Correcting Vibrometer Apparatuses

The problem is reduced to a synthesis of schemes with frequency characteristics (2) and (3). The basic circuit diagram satisfying equation (2) is depicted in Fig. 1, whereas Fig. 2 shows the basic circuit diagram satisfying equation (3). When the pick-up's damping degree is $\varepsilon_1 \geq$ 0.2-0.3 it is almost always possible to bring about the correction with a sufficient accuracy. Correction of the pick-up's damping degree is made with the use of equations (4) and (5). The circuit diagram in Fig. 3 is satisfactory for equation (4), that shown in Fig. 4 for equation (5). There are 4 circuit diagrams, 1 graph and 3 Soviet references.

ASSOCIATION: Institut mashinovedeniya i avtomatiki AN UkrSSR (Institute of Machinery and Automation of the AS UkrSSR)

SUBMITTED: December 22, 1958

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SOV/115-59-6-14/33

9(2,3)

AUTHOR: Karandeyev, K.B., Alfer'yeva, N.G.

TITLE: The Relations of Static and Dynamic Characteristics of High-Voltage Semiconductor Rectifiers

PERIODICAL: Izmeritel'naya tekhnika, 1959, Nr 6, pp 32-35 (USSR)

ABSTRACT: In this paper the authors determine the static, i=f(U), and the dynamic, $I_{cp}=f(U_{cp})$, half-wave characteristics of high-voltage semi-conductor rectifiers. They also consider the more characteristic case requiring the application of the dependency $I_{cp}-f(U_{cp})$ for the forward and reverse direction of the current passing thru the rectifier, the calculation and the analysis of temperature conditions of self-compensation of a symmetric germanium rectifier bridge curcuit. The experimental investigation of static and dynamic characteristics of DG-Ts germanium rectifiers confirmed the correctness of the dependencies obtained. There are 2 graphs, 1 set of circuit diagrams and 6 references, 5 of which are Soviet and 1 American.

Card 1/1

SOV/21-59-6-11/27

AUTHORS: Karandeyev, K. B., Corresponding-Member of the AS UkrSSR, and Hik, L. D. (Gik, L.D.)

TITLE: Correction of Frequency Characteristics of Accelerometers

PERIODICAL: Dopovidi Akademii Nauk Ukrains'koi RSR, 1959, Nr 6, pp 620 - 622 (USSR)

ABSTRACT: This article presents two experimentally-verified schemes for correcting accelerometers. The application of correction schemes after amplification of the pickup signal is shown to yield a big gain in sensitivity of the vibrometer device. Figure 1 shows a correction scheme based on the multiplication of characteristics, satisfying the equation

$$\nu_k' = \eta \frac{[1-(\omega\tau_1)^2]+ j\cdot 2\varepsilon_1 \omega\tau_1}{[1-(\omega\tau_2)^2]+ j\cdot 2\varepsilon_2 \omega\tau_2} \qquad (2)$$

where τ_2 and ε_2 are time constant and damping grade of

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arrangement obtained as a result of correcting, ω is angular frequency, τ_1 is pickup's time constant, ε_1 is grade of damping. The correction by this scheme was physically accomplished at $\varepsilon_1 \geqslant 1$. Figure 2 shows a correction scheme based on modelling the error, satisfying the equation

$$p_k'' = -\frac{1}{\eta}\,\frac{\omega^2(\tau_1^2-\tau_2^2)-j\cdot 2\omega(\varepsilon_1\tau_1-\varepsilon_2\tau_2)}{[1-(\omega\tau_2)^2]+j\cdot 2\varepsilon_2\omega\tau_2}. \qquad (3)$$

by which the correction was physically accomplished at any value of ε_1 (when relation ω_2/ω_1 was sufficiently high). For this scheme, the conditions of correction and scheme parameters obtained in the result of correction at $n \geqslant 1$ have the following expression:

$$\eta = \left(\frac{\tau_1}{\tau_2}\right)^2 - 1; \quad \frac{\eta}{\sqrt{m\,(m+1)}} = 2\varepsilon_1 \frac{\tau_1}{\tau_2} - 2;$$

$$\tau_2 = RC\sqrt{\frac{m}{1+m}}; \quad \varepsilon_2 \approx 1.$$

The experimental checking was done on electric models of seismic pickups, one of which is shown in Figure 3. The frequency characteristic of this model scheme is equivalent to a seismic pickup having

$$\tau_1 = \sqrt{LC} \text{ and } \varepsilon_1 = 0.5\ R\sqrt{C/L}.$$

Figure 4 shows the pickup frequency characteristic (curve 1) and the frequency characteristic obtained as a result of correction by the scheme shown in Figure 3, when $\tau_2 = 0.25\tau_1$.

Correction of Frequency Characteristics of Accelerometers

There are 3 schemes, 1 graph and 2 Soviet references.

ASSOCIATION: Institut mashinovedeniya i avtomatiki AN UkrSSR (Institute of Science of Machines and Automation, of the AS UkrSSR

SUBMITTED: December 22, 1958

KARANDEYEV, K.B.; MIZYUK, L.Ya.

Developing apparatus for airborne electrical surveys. Izv. Sib. otd. AN SSSR no.7:16-25 '59. (MIRA 12:12)

1.Institut avtomatiki i elektrometrii Sibirskogo otdeleniya AN SSSR.
(Prospecting--Geophysical methods)
(Aeronautics in geology)

9(6) SOV/119-59-10-6/19

AUTHORS: Gik, L. D., Engineer, Karandeyev, K. B., Doctor of Technical Sciences, Professor

TITLE: An Inert Vibration Pickup Which Is Attenuated by an Electro-mechanical Feedback

PERIODICAL: Priborostroyeniye, 1959, Nr 10, pp 14 - 15 (USSR)

ABSTRACT: For the measurement of vibrations it is necessary that the attenuation can be varied. However, this is usually not possible when operating with such attenuators as are based on the braking of a short-circuited coil in the magnetic field. By applying a negative electromechanical feedback, the system of mechanical oscillations is much easier attenuated. This method is explained by the equation of motion of a seismic system (1). This equation assumes form (2) when the negative feedback is taken into account. Provided the internal attenuation of the system is negligible, the degree of attenuation is defined by formula (4). The aforementioned negative feedback is used for the vibration pickup demonstrated in figure 1. The latter consists of two similar induction systems, the one being used for measuring the vibration para-

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meters, the other for realizing the negative feedback. The electromotive force produced by the vibration pickup is increased by an electronic amplifier, and at the same time it is possible to vary the degree of attenuation within the range 0.05-2. Vibration pickup has the following advantages over those which are attenuated by liquids: Attenuation is independent of temperature; the vibration pickup need not be hermetically sealed; the degree of attenuation can be adjusted. There are 1 figure and 2 Soviet references.

KARANDEYEV, K.V.

SOV/21-59-12-4/20

AUTHORS: Karandeyev, K.V., Corresponding Member of the AS UkrSSR, and Hik, L.D.

TITLE: On a Method of Synthesis of Correcting Γ -Shaped Quadripoles

PERIODICAL: Dopovidi Akademiyi nauk Ukrayins'koyi RSR, 1959, Nr 12, pp 1312-1315 (USSR)

ABSTRACT: The authors report on a simplified method of synthesis of correcting Γ -shaped quadripoles by way of reducing it to a synthesis of bipolars. The essence of this method is as follows: If the expression of frequency characteristic of a v_k correcting circuit is comparably simple (numerator and denominator polynoms of the transit characteristic are not higher than in second power), then the correcting circuit can be in the form of a single-unit Γ -shaped circuit, such as shown in Fig 1. If the quadripole load is neglected, then the coefficient of its transmission

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is much more complex, another synthesis method can be applied (Fig 2), where v_k is expressed as a series of simple factors

$$v_k = v_k' \cdot v_k'' \cdot \ldots \cdot v_k^n \qquad (3)$$

This method permits readily finding a correcting filter for various electric circuits, which can be utilized for extending the passage range of various transmitters (vibrometric transmitters, for example), certain amplifiers, oscillograph loops, etc. There are 3 diagrams and 4 Soviet references.

ASSOCIATION: Instytut mashynoznavstva ta avtomatyky AN URSR (Institute of Mechanical Engineering and Automation of the AS UkrSSR)

SUBMITTED: July 13, 1959

KARANDEYEV, K.B.

report to be presented at the 1st Intl Congress of the Intl Federation of Automatic Control, 25 Jun-5 Jul 1960, Moscow, USSR.

BYKHOVSKIY, M. L. - "Ultra stability in electronic calculating devices in the solution of nonlinear equations in indefinite form"
CHELYUSTKIN, A. B. - "Use of calculating devices in systems for the automatic control of rolling mills"
CHICHINADZE, V. K. - "Concerning some problems of the organization of self-adjusting and self-teaching systems of automatic control, based on principles of random search"
DAVYDOV, N. I. - "Development of automatic control systems for boiler units"
DUDNIKOV, Ye. G. - "Determination of optimum adjustments of industrial automatic regulation systems according to initial data obtained from experience"
DUB'YE, A. I., and ROZENVASSER, E. N. - "Methods of organizing Lyapunov functions in the theory of nonlinear regulating systems"
DRUZHININ, N. N. - "Balanced regulation and inter-communications of a multi-motor electric drive and technology in continuous rolling mills"
FEL'DBAUM, A. A. - "Problems of statistical theory of automatic optimization systems"
FEYGIN, V. I. - "Automation of a reversible cold rolling mill for nonferrous metals"
FILIPPOV, A. F. - "Application of the theory of differential equations with a discontinuous right side to nonlinear problems of automatic regulation"
GAVRILOV, M.A. - "Structural surplus and operational reliability of relay devices"
GANKIN, M. Z. - "Automation of irrigation systems"
GERTSENBERG, G. R., KASTEL'YAN, V. N., KOSTENKO, M. P., NEYMAN, L. R., and SIRKY, N. S. - "Power regulation of disturbance and problems of the stability of electric power systems"
GINZBURG, S. A. - "Logical method of synthesis of functional converters"
IL'IN, V. A. - "Methods of transmission of information and the structure of telemechanical systems for dispersed structures"
INOSOV, V. L., and LUTSKIY (fnu) - "The code-impulse system of tele-measurement for dispatched operations of trunk-line gas pipe lines"
IVAKHNENKO, A.G. - "Concerning the application of the theory of combined regulation systems for cybernetic adaptation systems"
KARANDEYEV, K. B., and SHTAMBERGER, G. A. - "A quasi-equilibrated bridge as an element in a system of automatic control"
KAZAKEVICH, V. V. - "Concerning the process of extra regulation of inert objects in the presence of disturbance"
KAZAKOV, I. E. - "Some problems of the theory of statistical linearization and its application"
KILIN, F. M. - "Some problems of the theory of impulse systems with time selectors"
KOBRINSKIY, A. E., BOLKHOVITIN, S. V., VOSKOBOYNIKOV, L.M., IOFFE, D. M., POLYAN, E. P., POPOV, B. P., SLAVUTSKIY, Ya. L., SYSIN, A. Ya., and YAKOBSON, Ya. S. - "The problem of bioelectric control"
KOLOMIYETS, B.T. - "New types of photo resistances and their field of use"
KORONKO, M.L., MIKHAYLOV, B. G., and SHUMILOV, K. A. - "System of automatic control and regulation of blast distribution in the tuyeres of blast furnace"
KOROBOCHKIN, B. L. - "Investigation of the dynamics of the hydraulic duct of a copying lathe"
KRASOVSKIY, A. A. - "Dynamics of continuous systems of automatic regulation with extra self-adjustment of corrective devices"
KRASOVSKIY, N. N. - "Concerning the selection of parameters of optimum stability systems"
KUKHTENKO, A. I. - "The dynamics of devices imitating living organisms"
KULEBAKIN, V. S. - "The invariant theory of automatic regulation and control systems"
LANIN, I. D. - "Pneumatic calculating devices as a means of insuring the reliability of complex automation systems"
LAZAREV, V. N., and PARKHOMENKO, P.P. - "Mechanization of processes of analysis and synthesis of the structure of relay devices"

KARANDEYEV, K B.

PHASE I BOOK EXPLOITATION SOV/4295

~~Karandyeyev, Konstantyn Borysovych~~, and Henrykh Abramovych Shtamberher (Karandeyev, Konstantin Borisovich, and Genrikh Abramovich Shtamberger) Kvazizrivnovazheni mosty zminnoho strumu (Quasi-Balanced Alternating Current Bridges) Kyyiv, Vyd-vo AN URSR, 1960. 184 p. 1,000 copies printed.

Sponsoring Agency: Akademiya nauk Ukrayins'koyi RSR. Instytut mashynoznavstva ta avtomatyky.

Ed.: V.P. Sihors'kyy, Candidate of Technical Sciences; Ed. of Publishing House: I.F. Shtul'man; Tech. Ed.: O.O. Kadashevych.

PURPOSE: This monograph is intended for engineers and scientific workers engaged in the study of electrical measurements and automation. It may also be used by students and aspirants in corresponding specialities.

COVERAGE: This Ukrainian book deals with the problems of design and analysis of special alternating-current bridge circuits (quasi-balanced), exceptionally simple in their use and designed for measuring alternating current. The principle definitions of measured parameters are described, and a brief review of existing methods of measurements is given. General equations of the bridge circuit are analyzed, and conditions are established for various independent measurements

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of separate parameters in complex resistance. Examples of the circuits and of devices, whose principles are used in measuring complex resistance, complete the book. The author thanks F.B. Hrynevych, L.Ya. Mizyuk, L.A. Synyts'kyy, K.M. Sobolevs'kyy, E.S. Anisimova, N.M. Kohan and V.O. Chekaylo for their advice and assistance. There are 146 references: 93 Soviet, 41 English, 8 German, 1 French, 1 Czech and 2 Polish.

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KARANDEYEV, K.B.; SHTAMBERGER, G.A.

Simultaneous measurement of capacitance or inductance and resistance with independent adjustment of network elements. Avtom.kont.i elek izm. no.1:5-11 '60. (MIRA 15:8)
(Electric measurements) (Impedance (Electricity)--Measurement)

40735

S/196/62/000/016/004/011
E194/E155

9.2110

AUTHORS: Karandeyev, K.B., Grinevich, F.B., and Shul'ts, V.P.

TITLE: Some methods of automatically checking the properties of electrolytic capacitors

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika, no.16, 1962, 10-11, abstract 16 B 42. (In the collection: Avtomat. kontrol' i izmereniya, no.1, Novosibirsk, Sib. otd. AN SSSR, 1960, 21-45).

TEXT: During the manufacture of electrolytic capacitors their electrical properties are inspected by means of bridge circuits which are adjusted to balance by an operator. An automatic checker should first hold the capacitor under working voltage for one minute, apply a polarising voltage during the electrical measurements and grade the capacitor according to its properties. In making automatic bridge circuits for inspecting electrolytic capacitors they should be made to give a percentage reading but without automatic balancing (so-called balanced, quasi-balanced and other bridges), but a definite region P of the circle

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diagram should correspond to permissible values of impedance. The region P can be determined by the method proposed by R.D. Gritskiv (Tekhnika izmereniya induktivnosti katushek s ferromagnitnymi serdechnikami, 1957, L'vov, MVO USSR) (Procedure for measuring the inductance of coils with ferromagnetic cores, MVO, Ukr.SSR). The authors describe three bridge circuits for automatic checking of electrolytic capacitors. The advantages of the first circuit are: a) the boundaries of the region P are, in principle, determined without error; b) the absence of variable reference capacitors; the limits are changed over by altering values of ohmic resistance; c) the polarisation voltage during checking is applied comparatively simply; d) large capacitances (100-2000 microfarads) may be checked without great complication. The disadvantages of the first circuit are: a) comparatively low sensitivity, necessitating greater accuracy of comparison of the moduli of the voltages; b) to determine the boundaries of the region P not less than three switchings must be made on the bridge circuit, which reduces the output of the equipment and increases the probability of false operation of the

output relays; c) as the earthing point of the bridge circuit is switched it is difficult to protect the circuit. In the second and third circuits the boundaries of the region P are determined approximately; the arcs of the circles of balancing which bound the region P (see sketch) are approximated by sections of straight lines which are subsequently determined by means of phase-sensitive indicators. Calculations show that the greatest error does not exceed ± (1+2)% [Abstractor's note: ± (1 to 2%)] provided the components of the bridge circuit are correctly chosen. The error is acceptable on electrolytic capacitors where the standard allows an error of measurement of capacitance of ±≤5%. Compared with the first circuit, the second and third are of high relative sensitivity (about four times greater); no switchings are required, which increases the throughput of the automatic equipment; there is one constant earthing point which greatly simplifies protection of the bridge circuit. Disadvantages of the second and third circuits include the limited range of rated capacitances which can be inspected (the circuits are impractical for inspecting electrolytic capacitors of capacitance greater than

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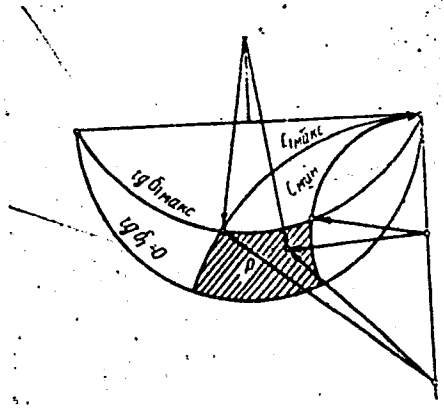
100 microfarads as this requires the use of large reference capacitors); and the provision of polarisation voltage is complicated. An example is given of the design of the elements of a bridge circuit for workshop inspection of electrolytic capacitors of 10 microfarads. The bridge circuit sorts the capacitors into four groups: 1) tan δ of capacitor exceeds limit; 2) capacitance exceeds limit; 3) capacitance below limit; 4) accepted capacitors. The theoretical investigations presented in the work were checked experimentally on model bridge circuits and fully confirmed the correctness of the results. The methods given for determining the region P allow comparatively simple and reliable automatic instruments to be built for production checking of electrolytic capacitors.
9 illustrations, 12 references.

[Abstractor's note: Complete translation.]

Some methods of automatically ... S/196/62/000/016/004/011
E194/E155

Sketch



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S/194/62/000/002/090/096
D271/D301

AUTHORS: Karandeyev, N. B., Grinevich, F. B. and Shults, V. P.

TITLE: Automatic bridge for sorting electrolytic capacitors

PERIODICAL: Referativnyy zhurnal, Avtomatika i radioelektronika, no. 2, 1962, abstract 2-7-2631 (V sb. "Avtomat. kontrol and elektr. izmereniya" (Automatic control and electrical measurements"), no. 2, Novosibirsk, Sib. otd. AN SSSR, 1960, 5-20)

TEXT: The automation of the parameter checking of electrolytic capacitors was studied theoretically in the Siberian Section of the Soviet Academy of Sciences. As a result, an automatic bridge was developed for checking capacitors type КЭ-2(KE-2) of nominal capacity of 10, 20 and 30 μF (case no. 4), with nominal voltages of 150, 300, 400 and 450 V. The sorting is done by capacity (capacitors are accepted within -15 and +45%), by less angle (capacitors are accepted when tg $\delta \leqslant 0.09$) and by leakage current (capacitors are accepted with a leakage current $<0.13 - 0.5$ mA, dependent on

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Automatic bridge for ...

the capacity and voltage). The sorting error is by capacity ± 2%, by tg δ ± 10%, and by leakage current + 5%. Checking speed is 3600/hr. The supply to the bridge is 220 V, 50 c/s; the operation is possible between -15° and -25°C and with humidity 80%. The operational principles of the automatic bridge, its block diagram and the mechanical system are described as well as the measuring circuit. 3 references. [Abstracter's note: Complete translation.]

Card 2/2

KARANDEYEV, K.B.; ALFER'YEVA, N.G.

Class 0.5 rectifying voltmeter. Avtom. kont. i elek. izm. no.2:55-62 '60. (MIRA 15:3)

(Voltmeter)

KARANDEYEV, K.B.; GIK, L.D.

Measurement of the vibration of rapidly rotating shafts. Avtom. kont.i izm.tekh. no.4:7-11 '60. (MIRA 13:8)
(Vibration--Measurement)

KARANDEYEV, K.B.; ZAKHARIYA, I.A.

Inductance compensation of the error caused by the effect of the curve shape for a simple circuit of a rectifier voltmeter. Izm.tekh. no.7:41-45 Jl '60. (MIRA 13:7)

(Voltmeter)

S/115/60/000/010/026/028
B021/B058

16.9500

AUTHORS: Karandeyev, K. B., Shtamberger, G. A.

TITLE: "Quasi Balanced Bridge as an Element of the Automatic Control System"

PERIODICAL: Izmeritel'naya tekhnika, 1960, No. 10, pp. 62-63

TEXT: The complex resistance and its parameters are indicated as being a suitable element for solving a series of transformation problems and for obtaining information. Ways are described for the continuous measurement and recording of the changes of information parameters. The method of utilizing the a.c. bridge under scalar conditions permits to simplify the measuring- and control procedure. Two cases are possible here: coordinating the scheme to the module- and phase condition respectively. Analytical conditions are mentioned, characterizing separate measurement of the components for the schemes of both conditions. Concrete variants of the schemes of quasi balanced bridges are mentioned for the separate measurement of the active and reactive components of complex resistances.

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S/020/60/132/02/23/067
B014/B007

9.3240

AUTHORS: Karandeyev, K.B., Corresponding Member of the AS USSR, Mizyuk, L.Ya., Gik, L.D.

TITLE: The Frequency Band of Direct Current Amplifiers With Conversion

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 132, No. 2, pp. 329-332

TEXT: In the introduction it is stated that the investigation of the transmission band of a direct current amplifier with converter and the determination of the relationship between the upper limiting frequency of the signals to be amplified and the frequency of conversion is of considerable interest. Two conditions, which must be satisfied in the determination of the limiting frequency of the band, transmitted by the direct current amplifier, are mentioned. They concern the amplification coefficient and the combination-components. The authors define the half-wave and the full-wave conversion, according to whether the input signal is interrupted in dependence on the inter-connection of the modulator or whether a phase shift occurs. With equations (1) and (2), formulas are given for the calculation of the transmission coefficient of both kinds of conversion. Modulation is followed by amplification which, in turn, is followed by demodula-

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The Frequency Band of Direct Current Amplifiers With Conversion

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tion. For the demodulator the same connecting systems exist as for the modulator, and also the transmission coefficients are calculated according to the same formulas. Further, the determination of the transmission band of the direct current amplifier with conversion at various connections of the modulators and demodulators is dealt with. The investigation showed that in the case of full wave conversion at the in- and output the output signal has no combination frequencies. By the influence of the intermediate-frequency amplifier which has feedbacks, the transmission band is limited. Fig. 1 shows the frequency characteristic of such a direct current amplifier. It is shown that the spectrum of the output voltage of a double fullwave conversion has the best properties. In conclusion, the authors investigate a direct current amplifier with a non-synchronous linear detector at the output. A half-wave conversion is assumed, and analysis shows that this amplifier is useless for the amplification of alternating voltages, but may well be used as mean-value voltmeter for a large frequency range. The mere possibility of producing broad-band direct current amplifiers with high sensitivity and stability is pointed out. There are 2 figures and 1 Soviet reference.

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